time, hospitals were warned not to base capital decisions on the cost-based payment system.

The decision of whether or not to have a budget neutral transition policy is different from the decision (discussed in Chapter II) of whether or not a fully established prospective payment system for capital costs should be budget neutral. Every dollar of relief provided during the transition to eligible hospitals under prospective payment would have to come either from the federal general fund or from other hospitals through reductions in their payments for capital. A generous policy for relieving "losers" might be considered too expensive for the federal budget, but a transition policy that is budget neutral because other hospitals would pay for it might be expensive in a different way.

Any reduction in payments to some hospitals means that they would have less funds for future investments. In other words, the adjustment problem would be shifted, at least partially, to other hospitals in the future. This approach might be more acceptable than immediate implementation because administrators of the subsequent group of adversely affected hospitals would have time to plan for the future. On the other hand, most transition policies would encourage some inefficient investment decisions during the transition and would discourage some efficient ones in future years.

The analyses presented in the remainder of this report are based on the assumption of budget neutrality, unless otherwise specified, for several reasons. First, the Congress has repeatedly indicated its intent to design a budget neutral system. Second, the size of the current budget deficit makes it unlikely that general funds would be used to finance much higher payments than are now made. Furthermore, the cuts in Medicare's payments for capital, beginning in fiscal year 1987, make substantial additional budget reductions less likely. Finally, the conclusions from the analysis generally do not change much when different levels of spending are considered.

TYPES OF TRANSITION DEVICES

A wide range of transition devices could be used--separately, or in combination--to alleviate some of the problems that are apt to occur

when prospective payment for capital is carried out immediately. The general alternatives discussed here are:

- Postpone prospective payment;
- Exempt certain hospitals;
- Blend prospective amounts with hospital-specific costs;
- Pay more for exceptionally high costs--that is, for "outliers"; and
- "Grandfather" existing capital--that is, continue to use cost-based reimbursement for capital in place before a specific date.

The classification of transition devices in this section is intended to illustrate the widest range of policies possible. The categories are neither exhaustive nor mutually exclusive. One could argue that almost all policies are variations on blending. For example, grandfather policies blend hospital specific costs and PPS rates with weights depending on the age of a hospital's capital stock. Similarly, outlier mechanisms are merely a more complicated average of hospital-specific costs and PPS rates.

Postpone Prospective Payment for Capital

The Congress could enact prospective payment for capital but postpone carrying it out until some future specified date. This alternative to immediate PPS recognizes the difficulty hospitals face in changing the costs of capital once a project is completed. Hospitals could adjust more easily to a new payment system for capital if they were given several years in which to alter their plans before prospective payment was fully established.

The disadvantages, however, of enacting a prospective payment for capital with some future effective date would be many. First, the Congress would lose the opportunity to put into place the budget control features of prospective payment during the interim. Second, hospitals would have incentives to speed up projects so that a higher per-

centage of costs would occur in years when they would be completely reimbursed. Finally, the Congress has already postponed enacting prospective payment for capital since 1984, and so hospitals have had the opportunity to make some adjustments during this period.

Exempt Certain Hospitals from Prospective Payment

Another simple policy that would provide relief from immediate and universal prospective payment for capital would be to exempt certain hospitals. These exempted hospitals could be chosen by any number of criteria. One obvious choice for exemption would be service to beneficiaries who might lack access to health care if the hospital closed. An alternative policy would be to exempt hospitals that could show especially serious financial problems under prospective payment.

The principal advantage of an exemption policy is that relief could be limited to a small group of hospitals. Although the exempted hospitals would continue to have all the negative economic incentives and resulting higher federal costs associated with cost-based reimbursement, most hospitals would move immediately to prospective payment for capital. The disadvantage of any exemption policy is the "notch problem"--some nonexempted hospitals would almost meet the criteria for exemption. Thus, hospitals that were only slightly different might receive very different payments.

Blend PPS and Hospital-Specific Costs

Under this method, the capital payment to each hospital would be based on a weighted average of the national standardized amount for capital and a hospital-specific amount. The method is analogous to the transition device used under the Medicare PPS for operating costs between 1984 and 1987. The weights could be designed so that the payment would be close to hospital-specific costs at first but would gradually shift to full prospective payment for capital at the end of a transition period. For example, under this approach, in the first year of transition a hospital might receive 80 percent of its actual costs and 20 percent of the prospective payment for capital. Then, in the second year, the hospital-specific portion would decline to 60 percent, and the prospective payment part would rise to 40 percent. In this manner,

the weights would shift 20 percent each year until prospective payment for capital was fully carried out in the fifth year.

The most important single element in designing a blending mechanism is its length--the number of years until payments would be fully prospective. If the proportion of payments determined prospectively were to increase by the same number of percentage points each year, then the length would determine the proportions for blending in each year. The mixture of hospital-specific costs and national prospective rates would not, however, necessarily have to change each year by equal percentage points.[1]

Blending has a major advantage over exempting certain hospitals' capital costs from prospective payment: namely, under blending, actual costs would be only partially reimbursed so that some incentives toward efficiency would be created for all hospitals. Its major disadvantage is that relief would go to all hospitals with actual costs greater than the payments under the national prospective rates, even to those with modest and quite manageable losses. Moreover, incentives for efficiently using capital would be reduced for all hospitals compared with the approach of immediately incorporating capital payments in the PPS.

Make Outlier Payments for Exceptionally High Costs

The financial problems associated with immediately establishing PPS would be greatest for those hospitals whose costs are extremely high compared with the prospective payments. The outlier approach would concentrate relief on hospitals with high losses; most hospitals would move to the prospective system immediately. Those with high capital costs would be reimbursed for all or some part of their costs in excess of the prospective amount. For example, hospitals with capital costs more than 200 percent above the prospective rate could be reimbursed for 80 percent of costs in excess of 200 percent of that rate.

---

1. One option, previously analyzed by CBO, would move from 95 percent cost-based in the first year to 80 percent cost-based in the second. After that, the percentage based on cost would decline by 20 percentage points annually--from 60 to 40 to 20 to 0. See Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options* (March 1988).

Several variations on the basic outlier policy are possible. For example, one approach would be to change each year the level of actual costs at which the outlier payments would begin (the threshold) and the proportion of those costs that would be reimbursed. In other words, start with a low threshold and high proportion reimbursed and gradually increase the threshold and reduce the proportion until prospective payment for capital is fully established. Alternatively, the outlier policy could be made symmetrical with respect to gains and losses--the big winners would lose part of their windfall to pay for the relief given to big losers. But hospitals with low current capital costs would be accumulating smaller windfalls, thereby reducing their ability to meet future capital needs that may be greater.

A major advantage of outlier mechanisms is that most payments to hospitals would be under prospective payment and subject to the previously discussed economic incentives. On the other hand, hospital administrators with moderate losses might argue that they also need assistance during the transition. Some might argue that transition payments should not be concentrated on a group of hospitals that includes those that were the most inefficient in their use of capital.

Grandfather "Old" Capital

Many hospitals have large capital expenses that are the result of decisions made before passage of the Social Security Amendments of 1983. Since some capital expenses are almost impossible to change in the short run, some hospitals might have difficulty in adjusting to a new payment system. Thus, one transition mechanism would be to allow all costs based on commitments before some date in the past--"old capital"--to be exempt from the prospective payment. This approach is similar to blending in that payments would be based on both actual costs and the national rates. Under grandfathering, however, the proportions based on each would not be constant among hospitals.

Without budget neutrality, a simple grandfathering policy could be based on the larger of current costs or the prospective payment for capital costs committed before the cutoff date. Under this approach, no hospital would lose and many would gain. Budget neutrality, however, forces a slightly different concept of grandfathering; payment for old capital would be on a cost basis no matter how large or small the

costs. Hospitals with dilapidated plant and equipment would receive the same as under current law. This amount would be less than under a fully prospective system. These "savings" would be used to pay higher amounts to hospitals with newer--and therefore more expensive--capital than they would receive under prospective payment. Payments for the costs of capital acquired after the grandfathering date would be based only on the new prospective system.

Several variations on budget neutral grandfathering are possible. The national prospective rate for capital could be the same for all hospitals, or it could be designed to pay hospitals with a high proportion of grandfathered capital costs a lower rate than hospitals with little or no grandfathered capital. If the rate were only paid for new capital, the payments would be concentrated on those hospitals with high costs that do not get grandfathered.

On the other hand, the system could be designed so the prospective rate would not decrease as the proportion of old capital costs rose. Since the prospective rate would be smaller under this alternative--to retain budget neutrality--those hospitals with recently completed, high-cost projects would lose more than they would under the former alternative. On the other hand, hospitals with old capital would receive at least some level of prospective payments that could be accumulated for future renovation needs.

The chief appeal of grandfathering is that it would offer complete relief for all the capital costs that could not be altered. Hospitals would make future investment decisions under incentives similar to those that would exist if implementation took place immediately, although their total payments for capital could be quite different during the transition. Presumably, hospitals would alter future investment behavior to minimize heavy losses.

A disadvantage of this type of policy is that, under certain circumstances, reasonable definitions of old capital would imply small prospective payments for new capital, as well as an extremely long transition period before full implementation. For example, if hospital capital has been growing rapidly in the recent past but is expected to be stagnant in the future--as some industry analysts believe--old capital may disappear at a slow rate. Furthermore, a definition of old capital that involves previous commitments to future capital projects could

grandfather all new projects for the first three or four years under the prospective system.

The most serious problem with grandfathering, however, is that hospitals with large capital projects finished before a certain date would be treated quite differently from those hospitals at only a slightly later stage in their capital cycle. Yet, the hospitals with the most recent investments would need funds as much as those completing projects only weeks or days earlier. Of course, some policymakers would argue that hospitals with projects begun after the passage of the Medicare PPS for operating costs would have done so with knowledge that their costs might not be fully reimbursed.

Use Combinations and Variations

Almost any of the policies discussed above could be combined to form a hybrid. For example, under grandfathering, payments for new capital could be a blend of hospital-specific costs and the national prospective amount for new capital. Similarly, outlier policies could be combined with blending to assure that large losses--or both gains and losses--under blending would be partially reduced.

In addition to combinations of devices, other variations on the basic policies could be used. For example, almost any of the transition devices could be modified to treat movable equipment differently from plant and fixed equipment. Adjustment to prospective payment for capital should be much easier for movable equipment with its shorter useful life than for the long-lived plant and fixed equipment. Therefore, a partial solution to the adjustment problem would be to move immediately to prospective payment for movable equipment and either continue cost-based reimbursement indefinitely or use one of the many transition mechanisms for fixed capital.

CHAPTER IV

EFFECTS OF THREE TRANSITION OPTIONS

What are the quantitative implications of including capital costs in the PPS on a transition basis? This chapter examines the implications of three specific options representing some of the broad approaches discussed in the previous chapters. The analysis compares payments under these three transition options with two alternatives--the current system of cost-based reimbursement and the case of immediately including capital costs in the PPS (see Chapter II). Because detailed data on patterns of specific hospital capital costs over a period of time are not available, five hypothetical hospitals with quite different patterns of capital costs were designed.

SPECIFIC OPTIONS FOR A TRANSITION TO PROSPECTIVE PAYMENT FOR CAPITAL

As described in Box 2, the three options to be analyzed are:

- A 10-year blending transition policy;
- An outlier policy with a 125 percent threshold; and
- A policy that grandfathers old capital under cost-based reimbursement.

Two other types of transition devices discussed in Chapter III--postponing prospective payment for capital and exempting certain hospitals--are not represented by specific options. Postponement is not analyzed because its effects would be roughly the same as current law. Similarly, exemption is the same as current law for exempted hospitals; other hospitals would have no transition. Moreover, without a specified rule for selecting which hospitals would be exempt, no further analysis is possible.

BOX 2
THREE SPECIFIC TRANSITION OPTIONS

Blending--10-year transition to PPS. This policy begins with a mixture of 90 percent cost-based reimbursement and 10 percent prospective payment for capital. Each year the mixture changes by 10 percentage points until the tenth year, which is fully under PPS.

Outlier--125 percent threshold for 20 years. Under this illustrative policy, a hospital would receive additional payments whenever its actual capital-related costs were more than 125 percent of the PPS amount for capital. For hospitals with actual costs between 125 percent and 200 percent of the PPS amount, the outlier payments would be set at 60 percent of the difference between actual costs and 125 percent of the PPS amount. Hospitals with costs between 200 percent and 300 percent of the PPS amount would receive 60 percent of actual costs between 125 percent and 200 percent of the PPS amount, plus 80 percent for the amount above 200 percent of the PPS amount. Hospitals with costs above 300 percent of the PPS amount would receive 60 percent of actual costs between 125 percent and 200 percent of the PPS amount, 80 percent for the amount between 200 percent and 300 percent of the PPS amount, and 100 percent for the amount above 300 percent of the PPS amount. For example, if the PPS amount were $400 per case, a hospital with actual costs of $1,350 per case would receive $ 1,050 per case. (This calculation can be illustrated as follows: $400 + 0.6 x ($800 -$500) + 0.8 x ($1,200 - $800) + 1.0 x ($1,350 -$1,200) = $1,050. Under this policy and assuming a PPS amount of $400 per case, the maximum loss is $300 per case.

Grandfathering--September 30, 1988 cutoff date. This method would continue cost-based reimbursement for capital projects that were in service on or before September 30, 1988. Projects begun after that date would be covered under the PPS standardized amount. To maintain budget neutrality, the PPS rate for each hospital would be reduced to reflect the proportion of grandfathered costs to total costs. For example, a hospital with no grandfathered capital costs would receive the full PPS payments, while a hospital whose costs were fully grandfathered would not receive any PPS payments.

Before analyzing the transition options based on the hypothetical hospitals, it is useful to consider how the aggregate payments under each option would compare with prospective payments for capital. The proportion of payments determined prospectively--as opposed to the proportion determined retrospectively or by some other transition device--would vary considerably both between options and over time within the same option (see Table 3). Immediately including capital costs in the PPS, for example, would offer no transition time and would include 100 percent of payments under the PPS during the first, tenth, and twentieth years.

On the other hand, transition policies would compute only a portion of the payments prospectively. The 10-year blending policy would base only 10 percent of payments on the prospective system during the first year. The proportion paid prospectively would increase from 10 percent in the first year, to 50 percent in the fifth year (not shown in the table), and, finally, to 100 percent in the tenth year. On average,

TABLE 3. CHARACTERISTICS OF ALTERNATIVE TRANSITION POLICIES, 1989-2008

	Length of Transition	Percentage of Payments Paid Prospectively			
		20-Year Average [a]	First Year	Tenth Year	Twentieth Year
Current Law	Never	0	0	0	0
Immediate PPS	0	100	100	100	100
Ten-Year Blending	10	73	10	100	100
Outlier Payments	20	88	88	88	88
Grandfathering	[b]	52	11	60	78

SOURCE: Congressional Budget Office calculations.

NOTE: The proportions in this table are based on several simplifying assumptions: no growth in total capital costs; a 20-year average useful life for plant and fixed equipment; a five-year average useful life for movable equipment; and a mix of 40 percent movable equipment and 60 percent fixed equipment.

a. This 20-year average proportion of payments is calculated by computing the ratio of the present value (at a discount rate of 3 percent) of the prospective payments under each transition option to the present value of the payments under immediate inclusion of capital costs in the PPS.

b. Grandfathering would continue until every building and every piece of equipment are fully depreciated.

as measured by the discounted present value, about 73 percent of payments over the 1989-2008 period would be paid prospectively.[1]

The outlier policy would compute 88 percent of payments prospectively each year; only 12 percent would be excluded. Because the outlier policy would last for the entire 20 years, the proportion paid on a prospective basis would be constant.

The transition policy based on grandfathering of old capital would have a longer period of transition than any of the other options. The proportion paid prospectively would increase from 11 percent during the first year, to 60 percent in the tenth year, and to 78 percent in the twentieth year. These proportions are based on the assumption that plant and fixed equipment have an average useful life of 20 years, while movable equipment has an average useful life of five years. Thus, the average paid prospectively over the 20-year period would be 52 percent. Note, however, that the length of the transition depends on assumptions about how fast the capital stock is growing and how long the average piece of capital lasts. For example, if capital were growing at 5 percent each year, then the average paid prospectively over the 20-year period would be 71 percent.

The proportion of payments excluded from prospective payment under any transition policy would depend on the specific characteristics of that policy. For example, the proportion of payments excluded would be less under blending that lasted five years than under the illustrative 10-year option, while the proportion excluded if blending lasted 20 years would be even greater. Similarly, outlier policies that were more generous would remove more payments from the prospective system; less generous outlier policies would remove less. Grandfather policies with earlier cutoff dates would exclude less, while those with later cutoff dates would exclude more.

1. The discounted present value equals the worth of a future stream of payments in terms of their value now. For a more extensive discussion, see J. Fred Weston and Thomas E. Copeland, *Managerial Finance*, 8th ed. (New York: Holt, Rinehart and Winston, 1986), Chapter 5.

METHODOLOGY

To compare the three transition options, this study analyzed five hypothetical hospitals chosen to illustrate the important effects of each option on specific types of hospitals. The more common approach of analyzing actual cost data was not possible because such data are not available. Moreover, statistics averaged across broad classes of hospitals would obscure the essential differences in how specific hospitals might be affected under any of these options.

Data concerning the capital cycle is necessary to evaluate each transition device. For example, individual hospital data on when future capital projects would be completed is required to evaluate the grandfathering option. The effects of the transition options can best be understood in the context of specific hospital situations.

Assumptions Behind the Analysis

Analysis of the five hypothetical hospitals is based on simplifying assumptions about the economy and organizational behavior. Two distinct sets of assumptions lie behind this analysis. One set deals with the economic environment and the nature of investment activity, and the other concerns the response of investment behavior to an important change in reimbursement policy. The environmental assumptions include:

- *No Inflation or Growth Takes Place.* To simplify the analysis and facilitate comparisons over time, the analysis assumes that the cost of hospital capital goods does not change over time. Furthermore, the amount of real capital per case does not increase either.

- *Fixed Capital is Replaced Infrequently.* All investment for plant and fixed equipment for a specific hospital is assumed to occur at a single point in time. All plant and fixed equipment is assumed to be depreciated over 20 years, although it sometimes can continue to be used subsequently.

- *Movable Equipment is Replaced Continually.* Movable equipment--as contrasted with plant and fixed equipment--is assumed to be replaced continually as it depreciates. Although movable equipment is assumed to have a useful life of only five years, its level at each hospital would remain constant unless the hospital engaged in a major expansion of plant and fixed equipment.

- *Interest Plus Depreciation Costs Remain Constant.* Interest plus depreciation costs are assumed to be constant throughout the useful life of an asset. Although this assumption appears unrealistic given the capital cycle, it helps focus the following analysis on two key components of the variation in capital costs: magnitude and timing. The hypothetical hospitals vary both in the level of their capital costs and in the year in which major renovations occur. These features of the model are more important to the analysis than the variation in interest payments that takes place during the useful life of an asset.

- *Budget Neutrality is Maintained.* Payments under each of the options are designed so that, in aggregate, hospitals receive the same total payments as under the current system--that is, actual costs. (Under current law, 1989 payments are reduced 15 percent below actual costs.)

The major results of the analysis do not depend critically on the simplifying assumptions. In separate sensitivity analyses, the assumptions about inflation, the discount rate, and budget neutrality were relaxed. Inflation was allowed to vary from 0 percent to 8 percent annually, the discount rate ranged from 1 percent to 5 percent, and federal costs were raised 20 percent and cut 20 percent. Variations on each of the transition policies were also examined. Although the specific payments were different in each case, the relationships discussed in this chapter generally were not altered significantly. Major exceptions are specifically noted in the text.

The key behavioral assumption is that hospitals would not, in fact, change their behavior. Without accurate data on how hospitals might respond, this assumption provides a worst-case scenario. To the extent that hospitals are able to and do change their behavior, the var-

iation in outcomes under an immediate PPS would be less than shown here, and consequently the impact of--and need for--the transition alternatives would be reduced.

Description of the Five Hypothetical Hospitals

The five hypothetical hospitals have been chosen to illustrate the strengths and weaknesses of each transition policy:

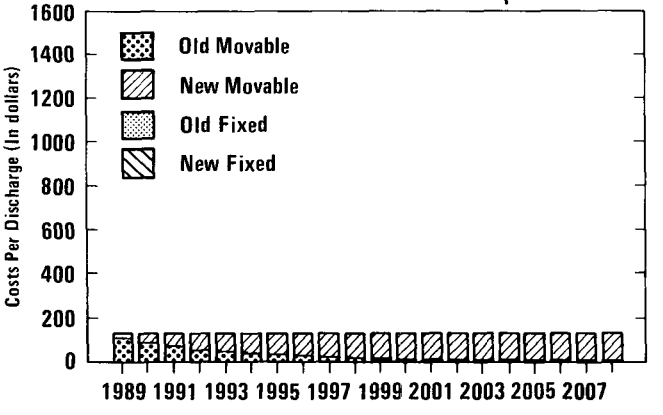
- *Hospital 1--"Low" capital costs with no plans for investment.* This hospital has not completed a capital project for many years and has no plans for one during the next 20 years.
- *Hospital 2--"Medium" capital costs with plans to invest in 10 years.* This hospital has low costs now but will have significantly increased costs in 10 years when it will complete a major renovation project. When costs are averaged over 10 years, Hospital 2 is appropriately classified as having "medium" capital costs.
- *Hospital 3--"Medium" capital costs with major assets that will be fully depreciated in 10 years.* Hospital 3 has high costs now because of a recent major renovation. In 10 years, however, its costs will fall significantly when the major renovation project is fully depreciated. Hospital 3 has identical costs for capital as Hospital 2 if the costs are summed (without discounting) over a 20-year period.
- *Hospital 4--"High" capital costs with a capital project to be completed September 30, 1988.* Hospital 4 will have high costs in fiscal year 1989 because an expensive new facility will be completed on September 30, 1988.
- *Hospital 5--"High" capital costs with a capital project to be completed October 1, 1988.* Except for its completion date, Hospital 4 is identical to Hospital 5.

Hospital 1 would have capital costs of $125 per case in each year between 1989 and 2008 (see Figure 6). The low payments are based on the assumption that its plant and fixed equipment are fully depre-

Figure 6.

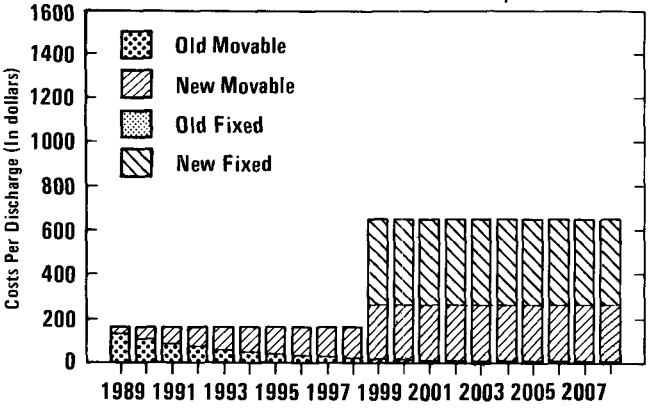
Baseline Medicare Payments for Capital Costs for Five Hypothetical Hospitals

Hospital 1



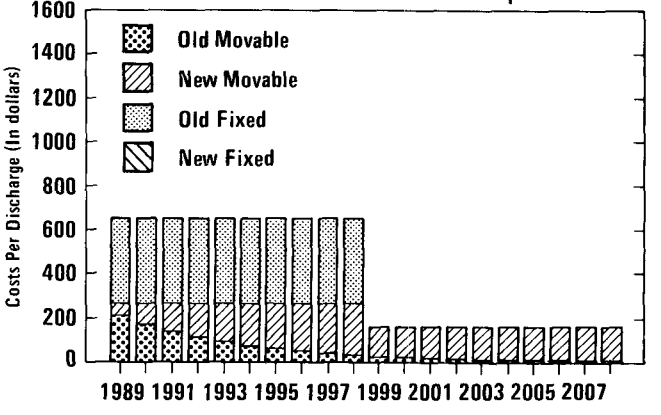
	CAPITAL COSTS		
	Total	Fixed	Movable
1989	125	0	125
1994	125	0	125
1999	125	0	125
2004	125	0	125
2008	125	0	125
Present Value =	1,860	0	1,860

Hospital 2



	CAPITAL COSTS		
	Total	Fixed	Movable
1989	160	0	160
1994	160	0	160
1999	650	390	260
2004	650	390	260
2008	650	390	260
Present Value =	5,491	2,475	3,015

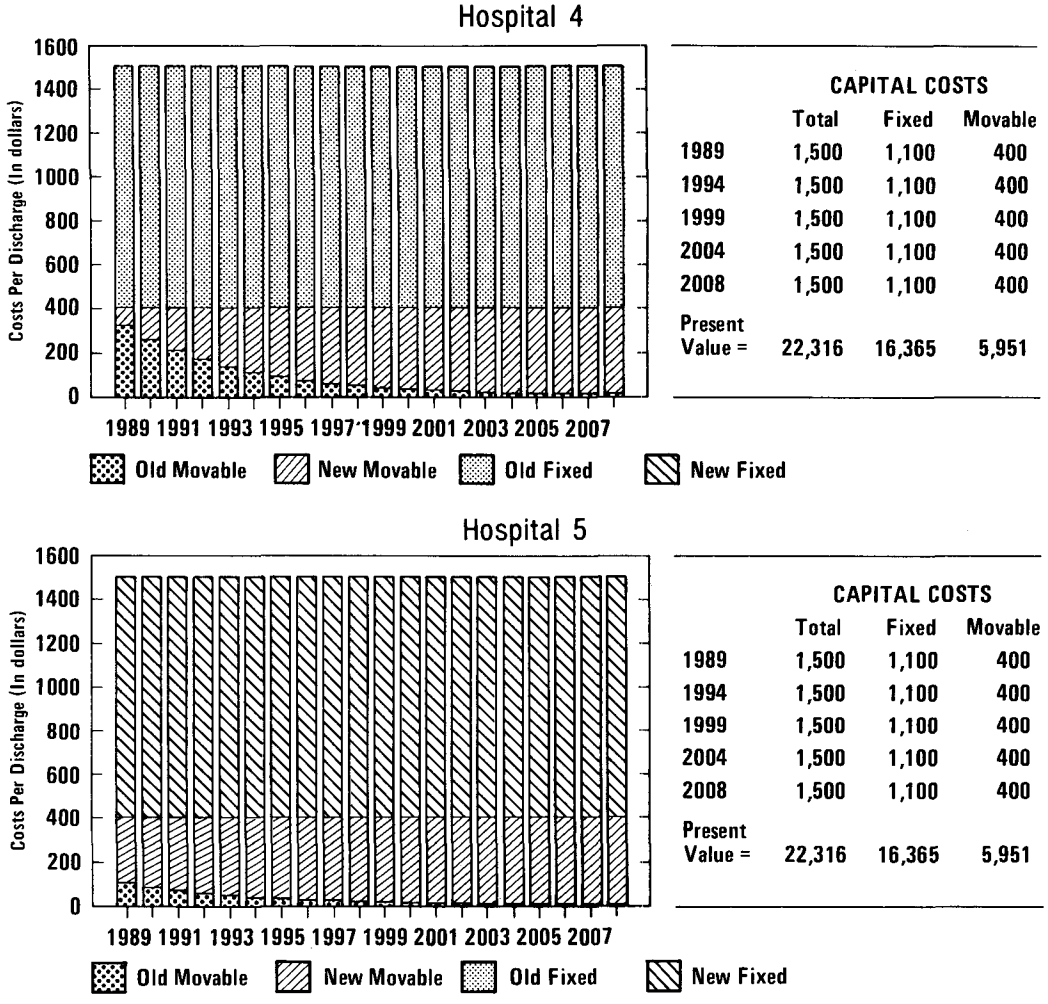
Hospital 3



	CAPITAL COSTS		
	Total	Fixed	Movable
1989	650	390	260
1994	650	390	260
1999	160	0	160
2004	160	0	160
2008	160	0	160
Present Value =	6,560	3,327	3,233

SOURCE: Congressional Budget Office calculations.
NOTE: Totals may not add because of rounding.

Figure 6. (continued)



	CAPITAL COSTS		
	Total	Fixed	Movable
1989	1,500	1,100	400
1994	1,500	1,100	400
1999	1,500	1,100	400
2004	1,500	1,100	400
2008	1,500	1,100	400
Present Value =	22,316	16,365	5,951

	CAPITAL COSTS		
	Total	Fixed	Movable
1989	1,500	1,100	400
1994	1,500	1,100	400
1999	1,500	1,100	400
2004	1,500	1,100	400
2008	1,500	1,100	400
Present Value =	22,316	16,365	5,951

SOURCE: Congressional Budget Office calculations.

ciated. Usually assets are worn out when fully depreciated. Hospital 1 represents an extreme case in which the plant and fixed equipment are fully depreciated but usable, and the hospital is unable or unwilling to build a new physical plant. The only capital costs facing Hospital 1 would be those associated with movable equipment--$125 per case. By assumption, Hospital 1 would operate for the next 20 years

without replacing its old plant or adding new capacity. The movable equipment would be replaced continually at the rate of 20 percent each year. Twenty percent is the straight-line rate of depreciation consistent with the assumed useful life of five years. Between 1989 and 2008, old costs of equipment (those based on equipment purchased on or before September 30, 1988) would decline from $100 per case to almost zero, while new capital costs (those based on equipment purchased after September 30, 1988) would increase from $25 to almost $125 per case (see Figure 6).

Hospital 2 would have total annual capital costs of $160 per case between 1989 and 1998 and $650 per case thereafter. Its fixed costs, like those for Hospital 1, would be zero at first. In 1999, Hospital 2 is assumed to complete a major renovation project resulting in additional fixed costs of $390 per case based on straight-line depreciation. Hospital 2 would find that its movable costs also would increase from $160 annually between 1989 and 1998 to $260 thereafter. This increase in the real cost of movable equipment is assumed to be the result of upgrading of equipment during renovation. Between 1989 and 2008, capital costs based on equipment purchased before 1989 would decline from $128 per case to $2 per case.

Hospital 3 would have capital costs of $650 per case between 1989 and 1998 and $160 per case thereafter. Its situation is much like Hospital 2 in reverse. Its 1989 to 1998 costs would be similar to those of Hospital 2 between 1999 to 2008, and its 1999 to 2008 capital costs would be similar to those of Hospital 2 between 1989 and 1998. In addition to the difference in timing of costs, Hospital 3 would have much higher costs attributed to old capital than is the case for Hospital 2. Between 1989 and 1998, Hospital 3 has old fixed costs of $390 as well as higher old movable costs compared with Hospital 2.

Hospital 4--completing its renovation on September 30, 1988--would have costs of $1,500 between 1989 and 2008. Both its costs of plant and fixed equipment--$1,100 per case--and its costs of movable equipment--$400 per case--would be constant.

Hospital 5--completing its renovation on October 1, 1988--would have identical capital costs as Hospital 4 between 1989 and 2008. Since old capital is defined as that in place on September 30, 1988,

Hospital 5 would have no old fixed costs and $100 in old movable costs compared with $1,100 fixed and $320 movable costs for Hospital 4.

EFFECTS ON HYPOTHETICAL HOSPITALS

This section compares capital payments under current law with those under an immediate inclusion of capital in the PPS and the three transition alternatives for each of the five hypothetical hospitals. For each of the hospitals, Figure 7 shows each year's payment for capital under the five alternatives. The small table in each panel contains two indices:

- The first column indicates how the hospital fares under each policy relative to cost-based reimbursements as measured by the discounted present value of payments. A discount rate of 3 percent was used. Since inflation is assumed to be zero in the analysis, this rate of 3 percent is roughly equivalent to an 8 percent discount rate with expected inflation of 5 percent.

- The second column indicates how well the hospital fares when compared with the national PPS rate for capital, again using discounted present values. For example, the indices of 282.2 and 88.2 for the outlier policy show that Hospital 1 would get almost three times as much under that policy as under cost-based reimbursement but would get somewhat less compared with immediate PPS.[2]

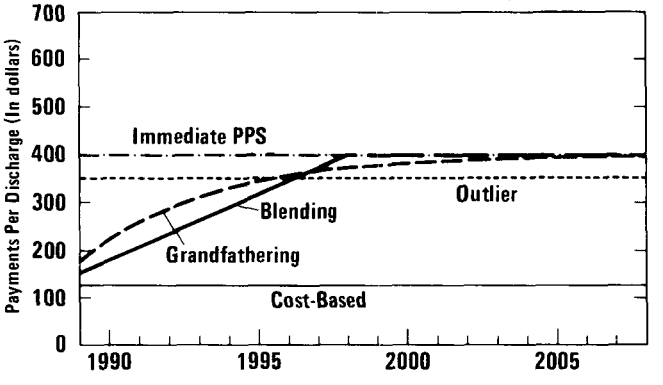
Immediately Including Capital in the PPS

Immediately establishing prospective payment for capital would cause large losses for those hospitals with high capital costs and large gains for those with low costs. Hospital 1, with a very low capital cost per case of $125, would receive $400 per case, or more than three times its cost-based reimbursement in the first year of PPS. (In Figure 7, notice

2. For ease of exposition, the phrase "immediate inclusion of capital costs in the PPS" has been shortened to "immediate PPS." For the same reason, current law payments for capital costs under cost-based reimbursement is referred to as "cost-based." However, it is important for the reader to keep in mind that, under current law, reimbursements are set at 15 percent less than actual costs in 1989.

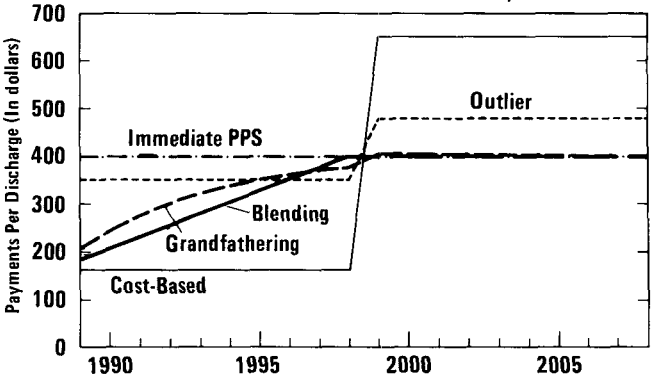
Figure 7.
Medicare Payments for Capital Costs Under Alternative Transition Options

Hospital 1



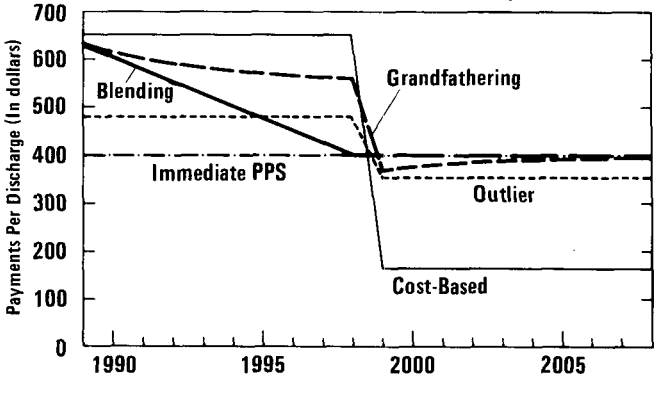
	PRESENT VALUE INDEX (Cost-Based = 100)	PRESENT VALUE INDEX (PPS Rate = 100)
Cost-Based	100.0	31.3
Immediate PPS	320.0	100.0
Blending	260.2	81.3
Outlier	282.2	88.2
Grandfathering	268.9	84.0

Hospital 2



	PRESENT VALUE INDEX (Cost-Based = 100)	PRESENT VALUE INDEX (PPS Rate = 100)
Cost-Based	100.0	92.3
Immediate PPS	108.4	100.0
Blending	90.7	83.7
Outlier	110.1	101.6
Grandfathering	94.7	87.4

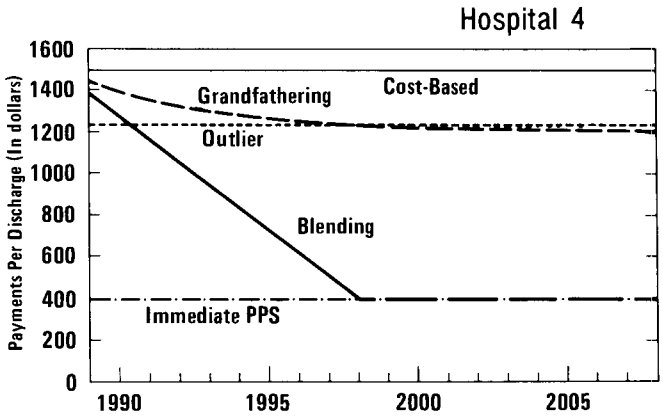
Hospital 3



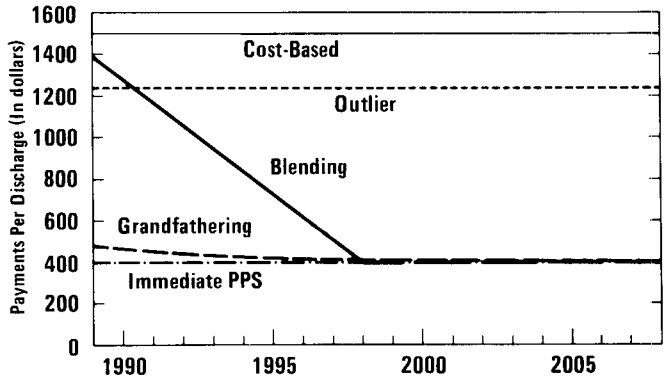
	PRESENT VALUE INDEX (Cost-Based = 100)	PRESENT VALUE INDEX (PPS Rate = 100)
Cost-Based	100.0	110.2
Immediate PPS	90.7	100.0
Blending	106.1	117.0
Outlier	96.3	106.2
Grandfathering	113.6	125.2

SOURCE: Congressional Budget Office calculations.

Figure 7. (Continued)



	PRESENT VALUE INDEX (Cost-Based = 100)	(PPS Rate = 100)
Cost-Based	100.0	375.0
Immediate PPS	26.7	100.0
Blending	46.6	174.8
Outlier	82.4	308.9
Grandfathering	85.0	318.7



	PRESENT VALUE INDEX (Cost-Based = 100)	(PPS Rate = 100)
Cost-Based	100.0	375.0
Immediate PPS	26.7	100.0
Blending	46.6	174.8
Outlier	82.4	308.9
Grandfathering	28.1	105.3

SOURCE: Congressional Budget Office calculations.

the much higher line for immediate PPS compared with the parallel line for cost-based reimbursement.) Hospitals 4 and 5, with an extremely high per case cost of $1,500, would also receive $400, a loss of almost 75 percent (indicated in Figure 7 by index value of 26.7 for immediate PPS compared with 100.0 for cost-based reimbursement).

Hospitals 2 and 3 are intermediate cases. However, Hospital 2 would do slightly better, with a present value index for immediate PPS of 108.4 (compared with 100.0 for cost-based reimbursement), than Hospital 3, with an index of 90.7. Hospital 2 fares better because the surpluses in the early years could be invested for a higher propor-

tion of the 20 years under consideration, at the assumed 3 percent rate of interest.

Blending

At any point in time, the payments for capital under blending lie between actual costs and payments under immediate inclusion of capital in the PPS. Hospitals with high costs do better under blending than under immediate PPS; those with costs lower than the PPS amount do worse compared with immediate PPS.

During the first year of the blending transition policy, Hospital 1 would receive $153 per case compared with $400 under PPS and $125 under cost-based reimbursement. Its per case payment would gradually increase to $263 in the fifth year and finally level out at the PPS rate of $400 in the tenth year. The discounted present value of payments under blending would be 160 percent higher than under cost-based reimbursement between 1989 and 2008, but would represent only 81 percent of payments under immediate PPS (indicated in the first column of numbers in the table of Figure 7 by 260.2 compared with cost-based reimbursement and in the second column by 81.3 compared with immediate PPS).

A surprising feature of blending is that Hospitals 2 and 3--which would have similar costs over the 20-year period--would fare differently. As measured by the discounted present value of payments during 1989 through 2008, Hospital 2 would lose about 9 percent of its cost-based payments under blending compared with a gain of about 8 percent under immediate PPS. In contrast, Hospital 3 would receive 6 percent more under blending compared with a 9 percent loss under immediate PPS.

This result stems from the declining weights associated with blending. In those years when its actual capital costs would be a low $160 per case, Hospital 2 would receive lower payments under blending compared with immediate PPS. Then, between 1999 and 2008, when its costs would rise to $650 per case, the payment for capital would be fully based on the national PPS rate. Hospital 3--with high capital costs between 1989 and 1998--would be helped considerably by higher weights on hospital-specific capital costs in those years. Then,

between 1999 and 2008, when its actual capital costs would be low, the payment would be based on the much higher national PPS rate.

For Hospitals 2 and 3, payments under blending--when discounted over a 20-year period--would not lie between cost-based and PPS payments. Instead, Hospital 2 would do worse and Hospital 3 would do better under blending than under either cost-based reimbursement or immediate PPS. This is an example where assuming no behavioral change can be misleading. Hospital 2, with low costs during the early years of transition to PPS, might change its behavior before its high-cost years after 1997.

Hospitals 4 and 5 would fare identically under blending since they differ by only one day in the capital cycle. The payment for capital would be close to cost-based reimbursement in 1989 and would gradually decline toward the PPS rate between then and 2008. Both hospitals would lose more than 50 percent compared with cost-based.

Even if the length of time for the transition to fully implemented PPS were changed, certain features of blending would not be altered. Hospital 1--whose sum of discounted payments would decrease with the length of transition--would do better under immediate PPS compared with any blending policy. High-cost Hospital 4 and its twin, Hospital 5--whose sum of discounted payments would increase with the length of transition--would do worse under immediate PPS compared with any blending policy. Hospital 2 would receive lower payments under any form of blending compared with Hospital 3.

Outlier Policy

Although all hospitals would receive lower payments under the PPS portion of the outlier payment system--the PPS rate must be reduced by about $50 per case in order to preserve budget neutrality--hospitals with high capital costs would receive additional outlier payments. If both the PPS portion and the outlier payments are taken into account, those hospitals would receive much higher capital payments than under immediate PPS or under 10-year blending.

Hospital 1--with low capital costs and no outlier payments--would be affected only by the across-the-board reduction in PPS rates.

(Notice the parallel line below the PPS line in the Figure 7 graph.) As measured by the discounted present value, its payments under the outlier policy would be 182 percent above cost-based reimbursement and only 12 percent below that for immediate PPS. Hospital 1 would fare better under the outlier policy than under 10-year blending because its own low costs would not enter into the calculation of payments under the outlier policy. This might not be the case if the outlier policy was "balanced"--that is, if payments for hospitals with costs below some threshold were reduced.

Hospitals 2 and 3--with very similar but reversed cost patterns--would fare somewhat differently under this outlier policy. Both hospitals would receive higher payments than under PPS during some years and lower payments during others. (The outlier line, which is parallel to the PPS line, is sometimes above it and sometimes below.) Hospital 2, however, would do slightly better in terms of present value under the outlier policy than it would do under cost-based or under immediate PPS (110.1 under the outlier compared with 101.6 under PPS). Hospital 3 would do worse under the outlier policy compared with cost-based reimbursement but better than under immediate PPS (96.3 under the outlier compared with 106.2 under immediate PPS).

The relative effects of the outlier policy compared with blending would also differ between Hospital 2 and Hospital 3. Hospital 2 would get relief from outlier payments during 1999 through 2008, a period during which its capital payments under the 10-year blend would be based fully on the national PPS rate. Hospital 3, on the other hand, would get more relief from blending during the 1989-1998 period when its costs would be high. During the years from 1999 to 2008 when its costs are low, payments would be higher under blending than under the outlier policy.

Hospitals 4 and 5--with large losses under immediate PPS because of their exceedingly high capital costs--would find their losses cut by almost 75 percent compared with PPS (indicated by the index of 82.4--a loss of 17.6 percent--for the outlier option, compared with 26.7--a loss of 73.3 percent--for the immediate PPS). For these hospitals, the outlier policy would provide much more relief than blending, under which they would lose 53 percent of cost-based reimbursement.